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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/696,788 | 10/30/2003 | Shufeng Han | 16569-US | 8112 |
| 30689 | 7590 | 10/11/2006 | EXAMINER | |
| DEERE & COMPANY ONE JOHN DEERE PLACE MOLINE, IL 61265 | | | HUGHES, DEANDRA M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3663 | |

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,788

Applicant(s)

HAN ET AL.

Examiner

Deandra M. Hughes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) 31-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller (US 6,463,374 published Oct. 18, 2002) in view of Staub (US 6,236,916 published May 22, 2001).

With regard to claim 21, Keller discloses a method of guiding a vehicle, the method comprising:

- establishing elevation data and corresponding location data for a work area (fig. 7, ELEVATION; col. 30, lines 33-42; col. 10, line 35);
- determining location data, including a particular location of a vehicle, within the work area (col. 9, lines 49-50);
- estimating at least one of roll data and pitch data corresponding to the particular location (col. 10, lines 44-45; note: 3 elevation parameters);
- guiding the vehicle based upon at least one of the estimated roll data, the pitch data, and an aspect such that the vehicle follows a target path (the entire patent of Keller is directed towards this end; further, see col. 3, lines 5-16 and col. 10, lines 44-45).

Keller does not specifically disclose that the vehicle is guided based upon an aspect which represents a direction of maximum slope corresponding to a particular location. However, Staub teaches guiding a vehicle according to a maximum slope

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corresponding to a particular location (fig. 4 and col. 4, lines 45-60). A maximum slope is inherently defined in terms of its maximum lateral and maximum longitudinal slopes, i.e. the well-known 'rise over run' definition of slope in the linear equation $y=mx+b$. It would have been obvious to one of ordinary skill (e.g., an optical engineer) in the art at the time the invention was made to guide the vehicle according to an aspect that represents the direction of maximum slope corresponding to a particular location for the advantage of reducing roll of the agricultural vehicle, as is specifically taught by Staub (col. 4, line 50-56).

With regard to claims 22, 24, and 27-30, Keller discloses the roll data comprises a roll angle and wherein the pitch data comprises a pitch angle (slope is an angle; col. 10, lines 44-45).

With regard to claim 23, figure 3 discloses a group of cells.

With regard to claim 25, the Examiner considers each path segment disclosed in figure 3 to be substantially linear.

With regard to claim 26, col. 6, lines 47-55 disclose steering compensation of the target path via steering compensation data.

Election/Restrictions

3. Claims 31-40 are merely a resubmission of previously withdrawn claims 11-20 drawn to non-elected Invention II. Consequently, claims 31-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention II.

Response to Arguments

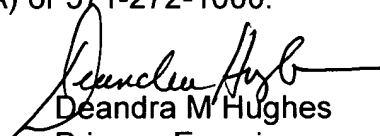
4. Applicant's arguments with respect to claims 21-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M. Hughes whose telephone number is 571-272-6982. The examiner can normally be reached on M-F, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Deandra M Hughes
Primary Examiner
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